

PROJECT NUMBER: 6912
PROJECT TITLE: Tobacco/Smoke Relationships
PROJECT LEADER: S. B. Hassam
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PERIOD COVERED: November 1989

I. CROSS SOLUBLES/BASE WEB (CHEMISTRY)

- A. Objective: Evaluate CSBW materials.
- B. Results: Production of the base web, CEL and RL from bright, burley and oriental tobaccos has been completed.

A study involving the following precipitating agents: silver nitrate, silicotungstic acid and flavianic acid has been initiated. To remove nitrogenous components varying amounts of the three materials were added to a BuS1 sample produced from an earlier batch of Burley CEL. The decanted liquor from the resulting mixture is being sprayed on BrBW.

The BuS1 fraction is high in ninhydrin reactive material (NRM). Oxidation of NRM to remove nitrogenous compounds might result in lower biological activity. Attempts to use ozone to oxidize BuS1 were unsuccessful.

Electrodialysis of Bu CEL showed no selectivity for nitrates. Ninety percent of all the cations and anions were removed. A sample of the dialyzed Bu CEL was freeze dried to produce 24.8 grams of solids. The control sample was applied to 25.0 grams of BrBW as is.

Preparation of CSC from 68 glucose, fructose, sucrose and amino acid addition samples was completed.

- C. Plans: Spray BrBW with samples from various treatments to produce model fillers. Request handmade cigarettes and replicate IT smoking. Prepare IT CSC samples and submit for S/M assay testing.
- D. References:
1. Izac, R. Notebook No. 8874, pp. 15-25.
 2. Drew, S. Notebook No. 8800, pp. 63-68.
 3. Hellams, R. Notebook No. 8613, p. 193.

II. MAINSTREAM--SIDESTREAM--BUTT ANALYSIS

- A. Objective: Evaluate mainstream, sidestream, and butts from cigarettes coated with Aromatek 245 for α -cinnamaldehyde delivery.

B. Results: An analysis of mainstream, sidestream and the butts from cigarettes prepared with heavy paper and coated with Aromatek 245 was completed. The amount of Aromatek 245 decomposing to deliver α -cinnamaldehyde as well as the distribution of the compounds to the MS and SS was similar to that seen in a previous study (1).

C. References:

1. Izac, R., Core, M., Houminer, Y. Memo to Ferguson, R.N. August 3, 1989. Analysis of mainstream, sidestream, and butts from cigarettes coated with Aromatek 245.
2. Izac, R. Notebook 8874, pp. 15-25.

III. SUPPORT FUNCTION: SAMPLE PREPARATION

A. Objective: To prepare chemical fractions and/or condensates as needed for biological and chemical analysis.

B. Results: Several TLC plates were analyzed using a radio-TLC scanner. The TLC plates contained the reaction products of ^{14}C -(U)-nicotine with either ozone, hydrogen peroxide or sodium hypochlorite. The starting material, ^{14}C -(U)-nicotine, was analyzed and found to be 98% pure.

Twenty-two sets of handmade cigarettes were prepared for various projects within the BCR division. Cigarettes from 69 different samples were smoked on a 30-port Borgwaldt smoking machine for Project 6912. Three smokings were completed for Project 6906. Six tobacco samples were shredded for Project 6912.

C. References:

1. Izac, R. Notebook No. 8874, pp. 15-25.
2. McGee, N. Personnel Communication to S. Drew.

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